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The U.S. Government's Global Hunger & Food Security Initiative

RAPID ASSESSMENT ON THE USE OF RADIO IN EXTENSION AND ADVISORY SERVICES IN MOZAMBIQUE

By Rex Chapota

February 2015



USAID
FROM THE AMERICAN PEOPLE





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RAPID ASSESSMENT ON THE USE OF RADIO IN EXTENSION AND ADVISORY SERVICES IN MOZAMBIQUE

Consultant Report

**Finalized version submitted to USAID/Mozambique
on March 6, 2015**

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Abbreviations

| | |
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| AFRRI | African Farm Radio Research Initiative |
| CIDA | Canadian International Agency for Development |
| CMCs | Community Media Centres |
| DNEA | National Directorate of Agrarian Extension |
| FORCOM | National Forum of Community Radios |
| FTF | Feed the Future |
| ICS | The Social Communication Institute of Mozambique |
| ICT | Information Communication and Technology |
| IFAD | International Fund for Agricultural Development |
| IIAM | Agricultural Research Institute of Mozambique |
| MEAS | Modernizing Extension and Advisory Services |
| MYAPs | Multi Year Assistance Programs |
| USAID | United States Agency for International Development |
| PARTI | Platform for Agricultural Research and Technology Innovation |
| PRC | Participatory Radio Campaign |
| RM | Radio Mozambique |
| SDAE | District Services for Economic Activities |
| ZOI | Zone of Influence |

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I would also like to recognize the team from USAID Mozambique facilitated by Dr. Karelyn Cruz and Paula Pimentel for their input and guidance during the design and implementation of the assessment.

EXECUTIVE SUMMARY

Feed the Future (FTF), the U.S. government's global hunger and food security initiative is being implemented in several countries in Sub-Saharan Africa, including Mozambique. The level of poverty and malnutrition remain high with a growing risk to vulnerabilities such as drought, flooding, climate change and tropical storms in Mozambique. Feed the Future is revitalizing agricultural productivity in Mozambique by focusing on specific value chains with high income potential for smallholder farmers and nutritional importance for vulnerable populations. Despite efforts by the government of Mozambique and cooperating partners such as USAID in supporting the adoption of improved agricultural technologies, adoption levels by smallholder farmers still remain very low. To develop a more effective strategy aimed at increasing technology adoption among small farmers, FTF in collaboration with the USAID-funded Modernizing Extension and Advisory Services (MEAS) program, commissioned a study to address some of the challenges facing the development of agriculture, markets and technology transfer in Mozambique. The main objective of this study was to assess the current use of radio as an extension and advisory services tool in Mozambique. The assessment specifically explored the use of local and community radio programs to identify whether or not they are effective and how they could be improved to increase awareness and adoption of new technologies among small farmers. A second objective of this study was to develop a workshop on how to make better use of radio, and particularly how to make communication—including radio—more participatory.

The specific objectives of the study and key findings are summarized below.

Objective #1: To conduct a supply-side assessment of current radio programming levels and approaches.

Major findings

- Signal coverage of radio stations are available in almost all districts in the FTF/ Zone of Influence (ZOI) with varied strength among the public, private and community radio stations that offer agricultural extension and advisory services.
- Radio stations with existing agricultural radio programs offer a diverse range of programs in terms of purpose, content, timing and impact but without a specific value chain programming approach.
- Different radio stations use different production processes based on how the program was started. The three major production processes that were identified are (1) own radio production, (2) plug and play from third party studios and (3) technical partner assisted models.
- There is no consistency in the timing of agricultural programs among different radio stations although stations they may claim their time is best for their listeners.
- There is no specific day for airing of agricultural programs.
- Most agricultural programs are 20-30 minutes long depending on the radio station schedule and format of the program.
- Different radio stations use different formats but the most popular one is a magazine format (with interviews, reports and announcements as key segments of the program). We found no evidence that there is a consensus among the available programs regarding the use of particular formats in the broadcasts in relation to content and types of voices.
- There are diverse sources of content though content is neither disseminated systematically nor pre-planned in line with a message matrix that identifies the best sources of information for different messages.
- There is a missed opportunity to use other types of programming that have captive audiences for conveying agricultural messages rather than rely solely on the normal agricultural program slot.

- Emphasis is put on ‘push’ of messages (top down, sender-centric) rather than determining what content and messaging the audience needs or demands (audience-centric programming with a more bottom-up approach).
- Despite dual partnership availability between radio stations/studios and an agency supporting the program, strategic multiple partnerships across and within value chains were lacking.
- Information and Communication Technologies (ICTS) other than radio (e.g., mobile phones) are rarely used to complement agricultural radio broadcasts, thereby limiting the extent of interactivity among technologies, near to real time feedback, and listening to radio on demand.
- The community radio stations have very little capacity to effectively produce and air agricultural radio programs.
- Vernacular language use is more prevalent at the community radio stations for agricultural programs.
- There is too little monitoring of on-going programs, let alone evaluation studies, to track the impact of agricultural broadcasts.

Objective # 2: To conduct a demand-side assessment with smallholder farmers and emerging farmers including extension workers and other organizations in the FTF/ZOI.

Major findings

- Radio continues to be the major media platform available in most of the rural households in Mozambique with greater than 50% ownership of functional radio sets.
- Farmers prefer listening to a radio station with good signal strength that disseminates information in their major vernacular language.
- The preferred agricultural program listening time for both male and female farmers is from 6-7pm when most farmers are not working and at home.
- Agricultural programs that intend to educate farmers beyond the level of awareness require a minimum of 30-minute listening time by the target audience.
- Farmers like different formats but prefer types that are interactive and participatory such as debates and testimonials from their fellow farmers.
- Farmers prefer to hear from both farmers and technocrats, including other value chain players, though they may feel left out during programs if farmer voices are missing.
- Farmers normally listen to their preferred on-air programs on a daily basis – though intermittently at times.
- Farmers are not fully satisfied with the programs that are on air.
- Farmers have never participated in agricultural programs using their mobile platforms but they are willing to use their personal airtime if given a chance to participate.
- There were no radio listening groups in the communities visited though farmers indicated their willingness to participate in these types of groups if they were available.

The major recommendations of the assessment are:

- I. Develop strategic and deliberate partnerships within and across value chains for effective and sustainable radio programming.
- II. Work with different types of radio stations based on audience preference to eliminate redundancy and ensure better overlapping coverage with at least two radio stations per focus district.
- III. Undertake systematic content development and delivery of agricultural extension and advisory agricultural programs to maximize the impact to farmers and other value chain actors.
- IV. Implement participatory radio programming for effective engagement and impact of the target audience.
- V. Use both existing agricultural radio programs with new mechanisms and/or fresh programming with a specific focus on a value chain approach.
- VI. Integrate mobile platforms for interactive and demand-driven radio for more effective extension service programming.
- VII. Deliver to radio stations capacity-building packages that are comprehensive in addressing the technology of radio programming as well as the content.
- VIII. Incorporate a business plan approach in agricultural radio programming to create profitable and sustainable outcomes for broadcasters willing to invest in these ventures.
- IX. Develop mechanisms for quality assurance, monitoring and evaluation of radio for extension and advisory services.
- X. Pilot and invest in innovative agricultural radio programming models for increased access to agricultural extension and advisory services and to evaluate their effectiveness.

1 INTRODUCTION

This section highlights the background information used for this assessment, a general overview of the study including the Terms of Reference (TORs), and key definitions within the context of using radio in extension and advisory services.

Background

Feed the Future (FTF)'s goal is to reduce poverty and hunger in the geographic focus areas in Mozambique through increased equitable growth in agriculture and improved nutritional status of Mozambicans, especially pregnant and lactating women and children five years and under. The strategic FTF focus is to achieve an increase in agricultural productivity, strong and functional linkages of smallholder farmers to markets, value addition through agro-processing, greater dietary diversity through improved use of locally produced crops, and enhanced nutrition at the household level.

Despite efforts by the Government of Mozambique and cooperating partners such as the United States Agency for International Development (USAID) supporting the adoption of improved agricultural technologies, adoption levels by smallholder farmers remain very low and agricultural productivity is improving only slightly. Efforts by USAID under the Platform for Agricultural Research and Technology Innovation (PARTI), the Agricultural Research Institute of Mozambique (IIAM) and the International Agricultural Research Centers (IARCs) have generated improved agricultural technologies that include new crop varieties, soil fertility management, pest management, conservation agriculture and post-harvest handling. USAID's agribusiness program (AgriFuturo) has worked with private sector entities including commercial producers, input suppliers and processors (Agribusiness Service Centers), and farmer associations and cooperatives (farmer-owned service clusters) to increase the demand, availability and adoption of more productive technologies by smallholder and emerging farmers (greater than 10 ha). USAID's Title II Multi-Year Assistance Programs (MYAPs) have supported the development of farmers' associations, demonstrations of new crop varieties and improved production practices. Farmers' demand for improved seeds and other inputs to achieve higher yields and respond to market opportunities have increased.

However, the poor performance of the agricultural sector in Mozambique is associated, among other factors, to low use of improved technologies, which may be due in part to limited extension and advisory service provision. Empirical evidence in Mozambique shows that receiving advisory services increases crop production by about 8%¹. However, in Mozambique as in other sub-Saharan countries, access to extension services is very limited. In 2002² about 13.5% of farmers had access to extension services; by 2012 it had declined to approximately 6.6%. The use of improved technologies in Mozambique is well below regional averages. Yet the process of adoption and dissemination of technological innovations in agriculture is critical to achieve scaling up and significantly increase the number of farmers who are adopting and using the new technologies in the country overall and in the FTF ZOI in particular.

Feed the Future continues to support agricultural value chain development with a focus on oilseeds (soybeans, sesame and groundnuts), pulses (cow peas, pigeon peas, and common beans), and fruit (bananas) value chains in 23 districts in the provinces of Nampula, Zambezia, Manica and Tete as shown in Figure 1.

¹ ECON Analysis, 2005

² MINAG-TIA, 2012

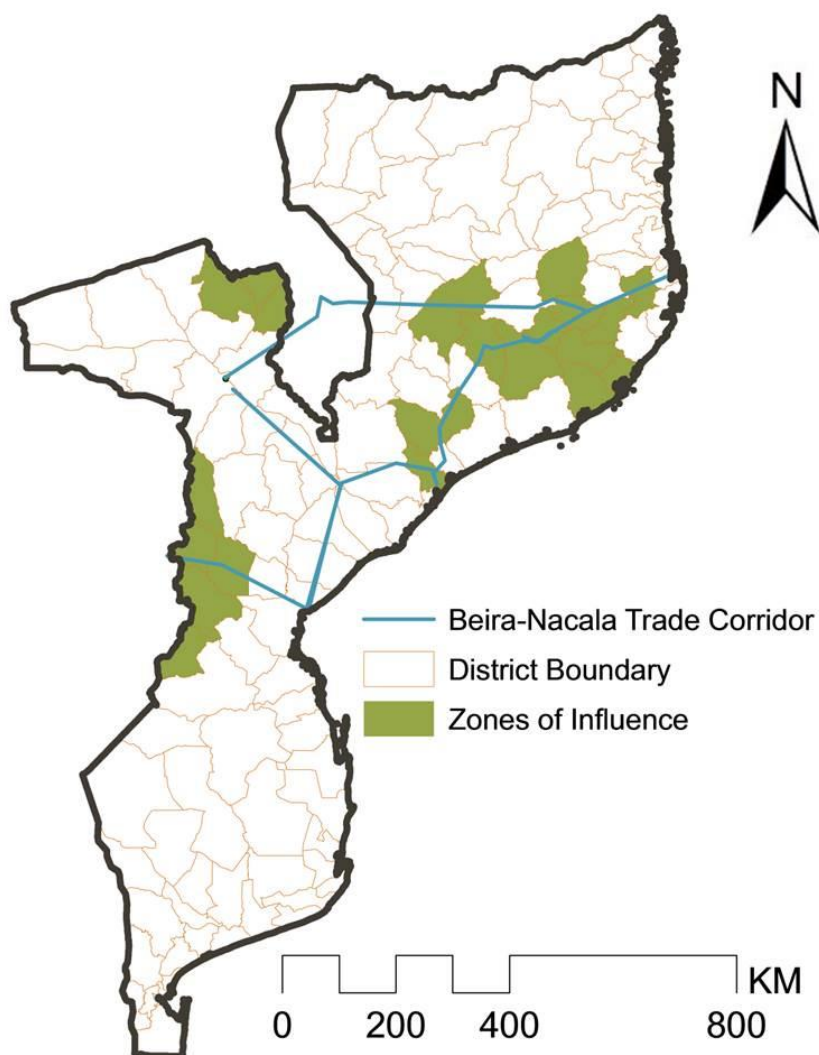


Figure 1: Map of the Districts and Provinces in the Feed the Future Zone of Influence in Mozambique.

Overview of the assignment

USAID Mozambique commissioned MEAS to support an assessment and analysis of alternative models of providing extension and advisory services along the target value chains in the FTF ZOI. One of the key FTF intervention areas is the promotion of Information and Communication Technologies (ICTs)-enabled tools and services that can address some of the challenges facing Mozambique agriculture development, markets and transfer of technologies. USAID requested improved knowledge and information management system assessment under the Scope of Work (SoW) Task 2 for MEAS³. The study's main objective was to undertake an assessment of the present use of radio as an extension and advisory services tool in Mozambique. The assessment 1) explored the current use of local and community radio programs to deliver agricultural information and 2) identified what was effective and how agricultural programing could be improved. Based on the outcomes of the assessment, a workshop was organized to

³ MEAS Scope of Work for USAID, 2014

address how to better utilize radio, and create effective, participatory communication programs for the agricultural sector.

The specific Terms of Reference of the assessment were:

- i. Conduct a meeting with key staff at USAID/Feed the Future (FTF) to discuss their expectations and the plan of action.
- ii. Undertake a 'supply-side' assessment of current radio programming levels and approaches at IIAM/PARTI including other community radio stations and providers.
 - To assess programming approaches, formats, information sources, content alignment and validation, targeting, feedback mechanisms, impact measurements, quality assurance, channels of delivery-local or national radio stations, technical capacity, studio equipment levels, linkages with farmers and other players in the selected value chains, and integration with other ICTs such as mobile platforms.
- iii. Undertake a 'demand-side' assessment with smallholder farmers and emerging farmers, including extension workers and other organizations in the FTF Zones of Influence (ZOI);
 - To assess farmers information needs regarding the FTF value chains, and to gather information on current radio use for agriculture, potential for radio programming, radio station preference, language preferences, types of format, program timing, program duration, specific content issues, opportunity for integration with other ICTs such as mobile platforms, and level of involvement in programming.
- iv. Facilitate a stakeholder workshop with key players involved in research, extension and agricultural communication to explore and share radio-based communication best practices.

The MEAS team in collaboration with the USAID Mozambique office identified Mr. Rex Chapota as the consultant to carry out the work in Mozambique based on his experience in the use of innovative radio programming in agricultural extension and advisory services in Malawi and other countries. This report details the findings on the current use of radio for agricultural extension and advisory services in Mozambique, as well as provides recommendations on what can be done to improve agricultural information dissemination by radio.

The context and use of radio in agricultural extension and advisory services

Major agricultural extension methods and approaches can be grouped as individual, group, and mass media. Electronic media is a type of mass media method of communicating agricultural messages, though they may be used in the context of group and individual methodologies too. In most agricultural extension literature, electronic media is used interchangeably with the term ICTs (Information and Communication Technologies), with radio being one of the oldest ICTs.

With over 800 million radio sets in developing countries, radio continues to be the most widely used medium for disseminating information to rural audiences across Africa. Radio can even reach isolated communities in regions without phones or electricity. Additionally, radio may serve as the main source of outside information for people who cannot read or write. Even in very poor communities, radio penetration is vast⁴. A vast majority of households in Africa own radios⁵. A study done in Mozambique

⁴ FRI, 2011a

⁵ Farm Radio International (2007). Our approach – Radio For Development Retrieved from:
<http://www.farmradio.org/english/donors/about/approach.asp>

by the Steadman Group indicates that radio ownership is much higher in Mozambique compared to the average for Africa, with 92% of the respondents owning a radio⁶.

Over the years, many development initiatives have used radio to reach rural audiences, both as an instructional technology and as a medium for participatory development. Radio is the most accessible of all information and knowledge-sharing sources and instruments on the African continent; yet the potential of radio as an effective development tool is often underestimated in policy formulation. For farming communities living on the periphery of information technologies and societies, radio is often their only window to global information and issues⁷.

There are many definitions or characterizations of radio for extension and advisory services – also commonly known as farm radio programming – of which the best is probably that offered by Farm Radio International (FRI)⁸. Farm Radio International defines farm radio programming as “*radio about farming and for farmers and it involves all stakeholders involved in the agricultural value chain*”⁹. The word ‘farm radio programming’ is interchangeably known as ‘agricultural radio programming’ and it has nothing to do with location, management or financing; rather it is defined by its content (production, processing, and marketing among other services) and the target audience – in this case, farmers. Farm radio programming can address commercial as well as smallholder farmers in urban, peri-urban and rural areas.

There are several types of farm radio programming. However, this study will focus on the type widely used by FRI known as the ‘Participatory Radio Campaign’ (PRC), which has been tried and tested in five African countries. The PRC is defined as “*a planned, radio-based activity conducted over a specific period of time, in which a broad population of farmers is encouraged to make an informed decision about adopting a specific improvement selected by their peers, based upon the best available information, to improve the food security of their families. It then provides the adopting farmers with the information and other support they require to implement the improvement*”¹⁰. This approach has been utilized and assessed in five African countries including Malawi, and two rounds PRC evaluations were completed between 2007 and 2010 under the African Farm Radio Research Initiative (AFRRI). In the last three years, the Farm Radio Trust has adapted the PRC approach to agricultural value chains such as soya, groundnuts, dairy and potato with support from Canadian International Agency for Development (CIDA), the Government of Flanders and International Fund for Agricultural Development (IFAD). The results of these studies will be used help develop the assessment approach and to develop recommendations for this FTF/ ZOI region since many FTF projects use a value chain approach.

‘Farm radio programming means the communication of agricultural information and services in a holistic manner addressing all issues (production, post-harvest management, marketing and value addition) that the farmer faces in an enterprise value chain through the radio alone and at times enhanced by other ICTs such as mobile phones’
Chapota et al (2014)

The major guiding principle of the PRC model is that farm radio programs should be more

⁶ Steadman Group, 2009

⁷ FRI, 2011a

⁸ Manda, 2011

⁹ Ward, 2010

¹⁰ FRI, 2011

participatory and bottom-up in nature, with a clear focus on helping farmers make informed decisions about farming practices that matter to them. This approach acknowledges that farmers understand and can express their own needs; that if they have the right information they can evaluate their options and make reasonable decisions to adopt – or not to adopt – a particular agricultural practice. This approach is premised on farmers identifying and selecting the themes of the campaigns. The PRC associated programs broadcast throughout the multiple week-long radio campaigns feature farmers' voices, perspectives, concerns and questions, and promote interaction and dialogue among farmers and between farmers and experts of their choice¹¹.

2 ASSESSMENT METHODOLOGY

This section highlights how the study was conducted including the data collection process, the sample size, the analysis and limitations of the study.

Data collection

This study can be categorized as a 'rapid' qualitative assessment due to the nature, depth and duration of the data collection exercise. The consultant travelled to Mozambique from November 14 to December 2, 2014. He met with key stakeholders for key informant interviews and some interaction with farmers through Focus Group Discussions (FGDs). The data collection approach utilized three sources of information: (i) review of secondary data and case studies of similar work done in Mozambique, (ii) key informant interviews for key institutions in the research-extension-farmer linkage including those that are involved in use of radio, e.g., radio stations, and (iii) FGDs with smallholder farmers.

Review of Secondary Data

This exercise involved gathering and reviewing existing documents related to the use and relevance of radio in agricultural extension and advisory services. This included using online data and stakeholders' documents as references. Key documents are listed in the reference section of this document.

Key Informant Interviews/Case Study Interviews with service providers and intermediaries on the use of radio for agricultural extension and advisory services

The key informant interviews were aimed at gaining a better understanding of the electronic media services in Mozambique. The specific information gathered included the design and performance (strength and weaknesses) of existing interventions, the linkages with other players, and their opinion on the sustainability of use of radio in Mozambique. The checklist that was used is provided as Annex 1. The list of stakeholders that were interviewed is presented in Table 1 below.

Table 1: Institutions represented in the assessment through interviews with key informants members

| Province: | Maputo | Nampula | Zambezia |
|---------------------|---|--|---|
| Name of institution | USAID, PARTI, IIAM, ICS, Agronomy Faculty- Eduardo Mondlane University, IFPRI, FEWSNET, iDE | IREX, IKURU, CLUSA International, ICS- Nampula Provincial Office, Namialo Community Radio Station, Instituto Nacional Das Communication de Mocambique (INCM) | Gurue Community Radio Station Agrifuturo |

¹¹ FRI, 2011

Focus Group Discussions

Four focus group discussions were conducted with farmers associated with agencies such as IKURU, Agrifuturo and Technoserve. We engaged ; i) Farmer Association Forum in Namialo, ii) Ruasse Farmers, iii) Agrifuturo supported Ruasse Farmer Association Forum and iv) Magige Farmers Group in Gurue.

Sampling techniques

Due to the nature and time limitations of this study, purposive sampling was used to select participants for interviews. The institutions included in the study were based on either their current or potential role in offering radio programming for agricultural extension and advisory services. Although many institutions were identified and contacted, we were only able to conduct a few interviews with representatives from these institutions. Farmer groups were purposefully selected for this study. The groups selected were already associated with the institutions involved in communicating about technological innovations through radio programming. This enabled us to collect information and perspectives from the “demand” or receiving side of the radio programming.

Limitations of the study

The following represent the major limitations to this study and should be considered when reading the results and recommendations:

- a) Failure to secure a larger number of interviews with key decision makers or members of institutions in the FTF/ZOI. Instead we had to rely on gathering information from their websites or sending the checklist electronically for a written response. Some notable agencies that we failed to include in this study were DNEA, Radio Mozambique and FORCOM.
- b) Being a ‘rapid’ qualitative assessment, there was no opportunity to collect in-depth quantitative data that could strengthen the findings. This may render some information subjective. However, this study provides some baseline information about the topic and should help to design a roadmap for effective use of radio in agricultural extension and advisory services.

3 MAJOR FINDINGS OF THE ASSESSMENT

This section highlights the ‘supply’ and ‘demand’ side findings based on the rapid assessment of the current use of radio for agricultural extension and advisory services in Mozambique.

Objective 1: Undertake a ‘supply-side’ assessment of current radio programming levels and approaches.

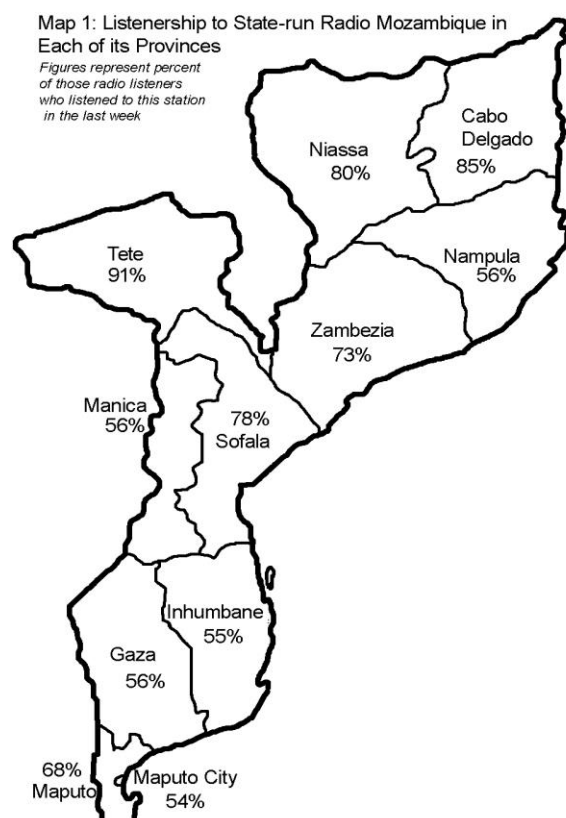
Under this objective, highlights of the findings are presented on the following aspects: mapping of radio stations, availability and extent of agricultural programs, programming approaches, formats, source of information, content alignment and validation, targeting, feedback mechanisms, impact measurements, quality assurance, channels of delivery-local or national radio stations, technical capacity, studio equipment levels, linkages with farmers and other players in the selected value chains and integration with other ICTs such as mobile platforms, etc. The findings are based on the insights gathered with the following key institutions that have agricultural programming: IIAM, ICS, Gurue Community Radio Station, Namialo Community Radio Station and IKURU radio programming on post-harvest handling.

Mapping of radio stations in Mozambique

The use of radio in agricultural extension and advisory services is dependent on the availability of radio stations and their signal coverage in the targeted areas. There are over 100 radio stations in Mozambique and this network reaches 60-70% of the population. The public broadcaster, Radio Mozambique (RM), represents the dominant radio station in terms of geographical coverage¹². This study found that there are radio signals available in all the communities of the FTF/ZOI, but signal strength varies among the different radio stations. The signal strength affects the broadcast quality and the radius of each station's reach. In Mozambique, radio stations can be grouped into three major categories: the national public broadcaster, private/commercial broadcasters and community radio stations.

Radio station signal coverage is available in almost all districts under the FTF/ZOI with varied strength among the public, private and community radio stations. These offer opportunities to utilize radio for agricultural extension and advisory services.

Figure 2: RM Listenership by Province
(Adapted from www.audiencescapes.org)



Radio Mozambique is probably the largest media organization in the country with 11 provincial affiliates and more than 1,000 employees. It broadcasts in 21 languages, including English and the national official Portuguese.

There are 10 regional affiliate stations, each broadcasting from their respective provincial capitals, and a dedicated sports channel. As part of this study, the team visited Nampula and Zambezia provinces to confirm the existence of the provincial radio stations and their signal coverage within and beyond the provinces¹³. Figure 2 shows the extent of listenership for RM. The share of listenership in the FTF provinces is about 56% in both Nampula and Manica, 73% in Zambezia, and 91% in Tete.

Community radio has the greatest number of stations. There are more than 80 stations and most of them are under the direction of the Social Communication Institute (ICS). This is a government department under GABINFO and their main mandate is to develop rural communications. The other community radio stations are operating as Community Media Centers (CMCs), supported by the Ministry of Science and Technology. Some stations are affiliated to the National Forum of Community Radios (FORCOM).

¹² OSISA, 2010

¹³ www.audiencescapes.org . The role of provincial radio stations, 2013

A 2010 paper by the Open Society Initiative for Southern Africa (OSISA) noted that there are over 83 community radio stations consisting of 36 ICS supported community radio stations, 16 religious stations and 31 CMCs, with almost 50% of the 128 districts covered by at least one community radio station¹⁴. Their study supported that there is at least one community radio station reaching the specific districts in the FTF/ZOI. For example, the Zambezia province districts of Alto Molocue, Gurue, Mocuba and Nioadala have ICS community radio stations. During this assessment, two ICS supported community radio stations were visited in the districts of Meconta and Gurue. Their community radio stations have a geographical radius coverage that does not exceed 60 km.

Table 2: The major ICS and FORCOM affiliated community radio stations in FTF/ZOI provinces

| Name of Province | Name of ICS Community Radio Stations | Name of FORCOM affiliated Community Radio Stations |
|------------------|--------------------------------------|--|
| Nampula | RTVC de Namialo | Radio Encontro |
| | RTVC de Namapa | Radio Watuna |
| | RTVC de Nacala | RC On'hipite |
| | RTVC de Erati | Radio Escola Femenina |
| | RTVC de Mmemba | RC de Parapato |
| | RTVC de Ribaue | RC Monapo |
| | RTVC de Mossuril | RC Luluti |
| Zambezia | RTVC de Licungo/Mocuba | RC Thumbire |
| | RTVC de Gurue | Nova Radio Paz |
| | RTVC de Alto Molocue | |
| | RTVC de Maganja da costa | |
| | RTVC de Morrumbala | |
| Manica | RC de Sussundenga | Gesom |
| | Mossurize | Radio Macequece |
| | Tambara | RC Catandica |
| Tete | RTVC de Mutarara | RC Planatto de Funruncungo |
| | RTVC de Bawa | RC N'sanangwe |
| | RTVC de Ulongue | |
| | RTVC de Nkhantha | |
| | Changara | |

Source: Adapted from ICS interviews, 2014, and Media and Telecoms Landscape Study of 2012 from www.cdacnetwork.org/contentAsset/raw-data/1fd9d708-6b9e-4c35-bf99-c606d8baad2a/attachedFile.

It was difficult to establish exactly how many non-state stations or private stations operate in the FTF/ZOI. However, we were told that there are more than eight commercial radio stations mostly based in Maputo¹⁵. It should be noted that specific GIS data coordinates and coverage maps of radio stations will be provided by INCM after a formal request is submitted by USAID or IIAM-PARTI as recommended by INCM Regional Delegate in Nampula.

¹⁴ OSISA, 2010

¹⁵ OSISA, 2010. Pg 16

The coverage of the different types of radio stations in the ZOI provides an opportunity for an overlapping reach of the radio stations that could help ensure that communities have access and choice of programming during their preferred listening times. This is important for enhancing the principle of redundancy in communication (otherwise known as repetition) since different channels allow communities to listen to both broadcasts of a program with multiple stations circulating the same content. On the other hand, it provides complexity in terms of identifying which radio station would be the ideal communication outlet for agricultural programming. To make this determination more information regarding listener preference and loyalty would have to be gathered from target audiences within communities.

Based on this information, we recommend that any strategy to implement agricultural programming on radio for extension and advisory services under FTF must work with a combination of at least the public broadcaster (RM) along with the most popular community radio station that has good signal strength in that district (either from ICS, FORCOM or CMC affiliation).

Availability of agricultural radio programming

Designing a new strategy for radio-based extension and advisory services must take into account what is already being done. We found that radio stations already have a diverse range of agricultural programming with regards to content, timing, production models, and impact. Most of the agricultural broadcasts are between 15-30 minutes long and aired once or twice per week.

Radio stations are broadcasting agricultural programs. They are diverse in terms of purpose, content, timing and impact with no specific value chain programming approach.

These programs use various languages depending on the reach of the radio station. Radio Mozambique uses Portuguese whilst the RM provincial stations may syndicate the same content in another major vernacular language. On the community radio stations, the programming is normally done in the vernacular language and at times repeated in Portuguese. The following agriculture programming was identified:

1. *IIAM agricultural radio programs*: IIAM is a research institution that received support from USAID to establish its own radio studios. Their studios have state of the art equipment for professional production. IIAM produces and shares its programs with ICS and distributes them across ICS supported community radio stations. The major content includes technology transfer for different enterprises with a goal to educate farmers to implement new technologies. In the last three to six months, six programs were produced in Portuguese and shared with ICS as part of the partnership agreement with 26 stations. At the community radio station level, the programs are reproduced in the popular vernacular language of the target audience. Most of the programs are in magazine format with interviews, and question and answer dialog which last 20 minutes. Another series of six broadcasts have been produced but they had not been shared with the stations during the time of this study.

Based on observations of the IIAM model, the following factors need to be addressed if IIAM is to be considered for production processes under the FTF:

- Speed of content production and distribution so that listeners are able to access current information that is in sync with the agricultural season.
- Monitoring of broadcasts and impacts at the farmer level must be put in place so new programming can consider the shortfalls and strengths identified in existing programs and use them in a feedback process to improve programming.

- Programming content must be aligned to specific agricultural value chains and contextualized for different agro-ecological zones rather than producing generalized content that goes to a number of districts.
 - Strengthen the capacity of the community radio stations to reproduce the content at the same standard and localization of issues to avoid losing the original quality of the programs.
 - Enhance mechanisms for demand-driven (bottom up) content from the farmers that is designed to meet their technological needs and avoiding top-down approaches driven by research institutions or agricultural service providers that may not be as relevant to farmers.
2. *A regular agriculture broadcast produced by a community radio station at Namialo in Meconta district:* Namialo Community Radio station is directly affiliated with ICS. The station was started around 2000; it has four permanent staff and 15 volunteers. The station has an agricultural program that is aired in the Makhuwa language on Monday at 6:10 pm and repeated on Sunday at 6:05 am; the same content is also aired in Portuguese on Monday at 1:30 pm and repeated on Thursday at 9:15 pm. The program 'Farmers antenna' is aimed at disseminating good agricultural practices and marketing information. The program is produced in a magazine format with interviews, reports and announcements. The communities initiated the program via the station's content management committee. The major content sources include the nearest IIAM station, SDAE, Cashew Nut Institute and PROSAVANA. It was also interesting to note that IKURU is buying airtime from the radio station to disseminate post-harvest agricultural tips for 45 minutes.
 3. *An IKURU supported four-minute post-harvest oriented broadcast:* IKURU is a company based in Nampula. IKURU is comprised of over 21 farmer's associations, that represent over 8,500 individual farmers across the region. IKURU exports groundnuts and has also started to export fair-trade cashews. Additionally, IKURU is involved in sesame, soybean, pigeon pea and maize promotion. In response to mitigating one of the major challenges facing the farmers, namely prevention of post-harvest losses, IKURU decided to introduce radio programs to go beyond other communication methods they use such as monthly bulletins that are sent to various associations. IKURU through a third party studio introduced a four-minute show focusing on post-harvest loss reduction. The show currently airs on Radio Mozambique, Radio Monapo and Radio Meconta. The program is produced in both Portuguese and Makuwa languages. The programs are burnt on CDs and couriered to the various radio stations where they are broadcast according to agreements made with the stations.
 4. *A regular agriculture broadcast by a community radio station in Gurue:* Gurue community radio station is an ICS affiliated radio station that started in 2002. The station has seven permanent staff and seven volunteers. The station covers a radius of 75km that includes two districts of Namaroyi and Ile and reaches over 400,000 listeners. The programs offered by the station are mainly in the Lhomwe language. The station has a regular agricultural program that airs on Monday at 5:30 am and repeated at 6:00 pm on Wednesdays. The Portuguese version of the program is aired at 1:30 pm on Tuesday and repeated at 5:30 pm on Thursdays. The 25-minute program focuses on general agricultural practices. The major content sources are district level players.
 5. *The ICS produced agricultural program hosted on Radio Mozambique:* ICS is a government agency that started its operations in the 1970s and focuses on communication for development efforts. ICS has its own agricultural radio program apart from coordinating the programs coming

from IIAM. The 30 minute agricultural radio program is aired from Monday to Friday starting at 5:00 am. The program is delivered in Portuguese with a focus on technology transfer.

Agricultural broadcasts on the airwaves offer an opportunity for FTF to build on an established methods since using radio for extension and advisory services is not necessarily new. On the other hand, this could pose a challenge in terms of change management if the stations are not ready to embrace new ways of doing business – especially with how to handle participatory radio programming that may require re-orientation in the context of agricultural value chains under the FTF initiative.

Program production process

The program production process represents a number of key steps taken in producing a program from collecting content to producing the finished product known as a broadcast. This process varies among radio stations and production studios and is influenced by a number of factors including the extent of involvement with different stakeholders, the ability and method to monitor quality, the level of involvement of the radio station, the sources of content, and cost. We found that different radio

Different radio stations use different production processes based on how the program started. The three major production processes identified are (i) 'own radio production', (ii) 'plug and play from third party studios and (iii) 'hybrid technical partner assisted model'.

stations use different production processes based on how the programming is established. We identified three main ways for producing agricultural programs (i) own radio station production (ii) third party production-plug and play (iii) technical partners assisted model.

- i. *Own radio station production:* This entails that the radio station develops their ideas for the program and initiates programming without external support or funding. The radio station raises revenue mostly through advertisements and program scheduling and content are based on the ideas and needs of the station. Normally agriculture programming is not specific to any particular theme or value chain but addresses general agricultural issues that are important to their audience. Examples of this type of programming are found at the national public broadcaster (RM) at the community radio stations. For example, in the Gurue and Meconta districts, we found as soon as the community radio stations were established their first schedules included an agricultural slot because the community demanded this type of programming. These types of community stations provide opportunities for FTF initiatives to integrate content on specific value chains and general agronomic information, including dissemination of new technology, without committing to fund the whole program or be involved beyond the interests of the segment being featured.
- ii. *Plug and Play third party production:* This is a production process that is normally developed and produced by third party studio houses. The studios could be privately owned or under a public institution such as IIAM and ICS. We observed two major types of plug and play operations, which are described below.
 - a. IIAM producers, who were initially trained by ICS produce the programs (in Portuguese). Through a partnership arrangement with ICS, programs are shared with over 26 community radio stations across the country. What is unique about this approach is that instead of a direct plug-and-play at the radio stations, the ICS-supported radio stations have the chance to adapt the script and voices to use the vernacular language on a specific radio station. One major advantage of this programming is the level of quality assurance in terms of the key

messages being delivered across all the outlets. The radio station must be rigorous when reproducing programs to ensure the message is uncompromised, relates to the local context and addresses specific needs of the target audience.

- b. The second scenario is where a third party studio produces programs and CDs are sent via courier or in person to the radio stations. IKURU does this for their 45 minute post-harvest broadcasts and ICS does this for their agricultural program aired in the mornings on RM. Normally the studio or the sponsor of the program buys airtime from the radio station so that they can plug and play. In this arrangement, the radio station is only involved in making sure that the broadcast has been inserted at the agreed timeslot. In this arrangement, the CD is played without modifying the programs with the announcer just mentioning to the audience that the program is coming next. However, in many cases station managers claim that they listen to the program before airing to ensure quality. Despite its strength to ensure that the content has been done in line with the sponsors' demand, this type of programming tends to have challenges on interactivity in near or real time.

FTF has to embrace a hybrid approach that takes into account positive aspects of all three models to ensure effective and impactful radio programs, especially in working with all key stakeholders, under each model.

- iii. *Hybrid technical partnership assisted model between an agency and a radio station.* This type of programming is done in collaboration with a development agency where the agency is involved in the design and execution of the broadcast series. A good example of this type of model is an Agrifuturo program on inoculants developed in conjunction with the Gurue community radio station. Agrifuturo is working directly with the radio station by providing them with technical content support for the program that is being produced by the station. Proponents like the involvement of the radio station with the agency who serves a role similar to an Executive Producer. These arrangements are common when an agency is not interested in using all of the available agricultural slots but rather provide and manage content specific programs that meet the needs of their target audience.

Broadcasting times of the agricultural programs

Broadcast timing is a major determinant for listenership especially among farming communities. If a program is aired at a time when they are unable to listen, the information will have little chance of reaching the target audience. However, for the radio station the timing of the program directly correlates to the type and kind of advertising that may materialize since advertisers usually want to support programming that is coming at the so called 'primetime'. In this study, we found that different radio stations had different time slots for agricultural programs for different reasons, almost of all them claiming that their listeners preferred the time it was being offered. Therefore, there was no consistent broadcast timing for agricultural programs at the radio station level. The major time slots mentioned by different institutions included the following:

There is no specific day for airing agricultural programs. There is no consistency in the timing of agricultural programs by different radio stations although they may claim that the time is best for their listeners.

- i. Early in the morning between 5 am and 6 am, when farmers are awake and going to the fields

- ii. Early afternoon between 1pm and 2 pm, when farmers are resting after the lunch break
- iii. Evening slots between 7 pm and 8 pm, when the whole family is home

Broadcasting days for agricultural programs

Beyond understanding the timing of the broadcasts, the respondents were asked if they aired agricultural programs on specific days. We found that was no specific day for airing agricultural programs because stations feel that farmers are willing and interested in agricultural program any day of the week as long as it fits into their daily routine. This provides an opportunity for FTF to offer programming as often as feasible as long as it meets the farmers' information needs and corresponds to a time during the day when they have access to their radio. This provides an opportunity new programs because it should be easy to incorporate them into a time slot with any broadcasting house since listenership is not directly related to particular days of the week.

Duration of an agricultural radio program

The duration for a radio program depends on how much time the listeners need to concentrate on the content and get the point of the message. However, the length of programming time will have cost implications. Radio stations and institutions were asked to share information on the amount of air time required for their main agricultural programs. Apart from the IKURU which has a 45 minute broadcast, most of the agricultural broadcasts lasted 15 to 30 minutes. Any decision regarding the duration of a program needs to consider the overall program schedule at a radio station. For example, an agriculture program may need 45 minutes of air time but that may not be available if the schedule is divided into 30 minutes slots at the station. Therefore, FTF needs to consider the duration of the program during the design phase of an overall communications strategy to ensure that farmers have enough time to listen and understand the content of the program without using so much time that the audience loses interest. It is important to note that programs that are longer than 30 minutes on the airwaves tend to be music or entertainment and those less than 15 minutes are normally news oriented and dealing with current affairs.

Formats being used in the major agricultural programs

There are various formats that radio stations use for agricultural programs. Formats used are based listeners' demands and preferences, producers' decisions, studio style of the radio station or the production house, and the type of message to be aired. Based on our study, broadcasters' preferred the magazine-type format because it gives them the opportunity to use different tools to engage with their audience. This may include questions and answers, interviews with experts and farmers, panel discussions and debates. The magazine approach helps to ensure a variety of presentation styles for the programs. However, the broadcasters could not explain why they were using each type of tool in the magazine program and why alternative tools were not being used. We recommend that FTF use the same magazine format but ensure that each specific tool is effective and relates to the issue being discussed. For example, a debate could be used as part of the magazine format during the discussion stage of the Participatory Radio Campaign approach where issues that affect whether farmers decide to adopt a specific technology are being presented. It is critical for FTF to examine how the utilization of ICTs will affect interactivity in the program to ensure that it responds to farmer's issues in near to real time.

Different radio stations use different formats with magazine being the most popular format; however there was no evidence of thought of why particular formats were being used in the broadcasts in relation to content and type of voice.

On-going innovative agricultural radio programming

In further discussions with the broadcasters, we found that apart from the normal radio programs there are other, less popular innovative formats that different partners use to convey agricultural information to audiences. We observed missed opportunities to repeat programming especially among programs that have a loyal following. Repetition and catching captive, loyal audiences can be an effective way of reinforcing messages and information to a target audience. Some of these types of programming include:

There is a missed opportunity to use other types of programming that already have captive audiences to convey agricultural messages – radio should not rely on the normal agricultural program slot to reach audiences.

- ✓ **Advertising:** Mainly used by private sector players such as seed companies, fertilizer companies, and chemical suppliers. These are popular for raising awareness about products rather than educating an audience. We found that the normal agricultural programs were missing an opportunity by not carrying any of these types of advertisements. Through their agricultural program, institutions such as IIAM and ICS should solicit advertising from partners as a public-private partnership. One of the public service providers noted that *‘we are actually thinking of reducing the airtime slot for the agriculture program because it is expensive’*. We asked them if they looked beyond their current funding portfolio to seek private partnerships; their answer was *‘no’*. The flipside is when broadcasters and institutions use agricultural advertising carrying a specific message – such as an agricultural tip lasting 60-120 seconds to be aired in the most popular show – e.g. it could be an entertainment program for youth or a political debate that has a phone-in component in which huge audiences participate.
- ✓ **Announcements:** Mainly used by the government to share information about developments in the agricultural sector. This could be done to announce the market season opening, price information and weather pattern announcements during prime time.
- ✓ **Jingles with mini dramas:** Mainly used by actors who want to convey a specific and focused message. This could be used for advertisement and involve popular comedians in Mozambique.
- ✓ **Endorsements by popular figures:** Though not widely used, some stations have run endorsements especially on seed advertisements whereby a popular figure will endorse something that he or she uses like a particular seed variety in order to attract the audience. It was also noted that IIAM has never used endorsements at the inception of the agricultural season from a high office such as the presidency.
- ✓ **News broadcasts:** Typically, there is a news broadcast on all the radio stations either every 30 minutes or each hour. However, these broadcasts rarely cover agricultural news. Respondents felt that it was possible to use the news hour broadcasts to carry short segments (even just two minutes) of agricultural news. Respondents felt it may be possible to introduce an agricultural news slot on the airwaves so that key agricultural news items may be shared.
- ✓ **Musical shows:** These are the most popular programs for entertainment and agricultural messages could be delivered through such programs. Creating agricultural messages using theme songs by popular artists may be effective. For example, a theme song on *‘use of inoculants’*, produced by the hottest musician in Mozambique could be used to support the

normal programming that is being done by Agrifuturo since this will appeal to even audiences that have never thought of listening to an agriculture program.

Feed the Future and its partners can leverage the use of the above opportunities in program design to reach captive audiences that are listening to programs instead of relying on only one major program format with repetition to reach their target audience.

Content sources

The credibility and authority of an agricultural broadcast hinges mostly on who is providing the program's content and its relevance to the listeners. The broadcasters' major source of content depends on the production model being followed. For example, if it is third party production, the radio station may not be aware of the content source since this is done at the studio level and coordinated by the agency facilitating the broadcasts. Most of the radio stations and studio houses interviewed indicated that their major source for content was the government extension and research system which include DNEA and IIAM. At the district level the most popular source was SDAE. Others indicated that they use published manuals from DNEA such as the agricultural handbook, while some use their own agency manuals that were developed with support from technical departments from the Ministry of Agriculture Department of Crops, Department of Agricultural Research, and others. Some consult individual experts during the design of the message.

There are diverse sources of content though it is not done systematically and pre-planned in line with a message matrix that identifies the best sources of information for different messages.

We observed that there is not a systematic consultation process used and that in many case there are no specific vetting processes apart from the IIAM programming that goes through an internal vetting process. We noted that in the case of the partnership model, there was a specific team that is known as 'Knowledge Partners' who work hand in hand with the development agency to vet the messages and periodically provide feedback on content.

Language of service for agricultural radio programs

All of the stations interviewed used Portuguese and the most popular vernacular language in the area of impact for their programming on community radio stations. Mozambique has diverse vernacular languages and each station has to focus on the language that the majority of people in their listening area speak. In some instances, programs are produced first in Portuguese and then translated and repeated in a vernacular language. This demonstrates the importance of determining the major languages in a target region prior to any organization investing in agricultural radio programming. This will ensure that the masses are being reached with messages they can understand. See Table 3 for the major languages used by the stations in FTF/ZOI provinces.

Use of vernacular language is more prevalent at the community radio stations for agricultural programs.

Table 3: The major languages used for the broadcasts in different provinces

| Name of Province | Name of ICS Community Radio Stations | Major language of broadcasts | FORCOM Community Radio Stations | Major language of broadcasts |
|------------------|--------------------------------------|------------------------------|---------------------------------|------------------------------|
| Nampula | RTVC de Namialo | Makhuwa | Radio Encontoro | Makhuwa |
| | RTVC de Namapa | Makhuwa | Radio Watuna | Makhuwa |
| | RTVC de Nacala | Makhuwa | RC On'hipite | Makhuwa |
| | RTVC de Erati | Makhuwa | Radio Escola Femenina | Makhuwa |
| | RTVC de Mmemba | Makhuwa | RC de Parapato | Makhuwa |
| | RTVC de Ribaue | Makhuwa | RC Monapo | Makhuwa |
| | RTVC de Mossuril | Makhuwa | RC Luluti | Makhuwa |
| Zambezia | RTVC de Licungo/Mocuba | Chuwabu | RC Thumbire | Cicewa, Marengo |
| | RTVC de Gurue | Lomwe | Nova Radio Paz | Chuwabu |
| | RTVC de Alto Molocue | Lomwe | | |
| | RTVC de Maganja da costa | Nharinga | | |
| | RTVC de Morrumbala | Sena, Lolo | | |
| Manica | RC de Sussundenga | Tewe, Manyika | Gesom | Tewe, Manyika |
| | Mossurize | Tewe, Manyika | Radio Macequece | Manyika |
| | Tambara | Not known | RC Catandica | Tewe, Chicunda, Manyika |
| Tete | RTVC de Mutarara | Sena | RC Planatto de Funrancungo | Tewe, Manyika, Nyungwe |
| | RTVC de Bawa | Nyanja, Chicunda | RC N'sanangwe | Tewe, Manyika, Nyungwe |
| | RTVC de Ulongue | Nyanja, Nyungwe | | |
| | RTVC de Nkhantha | Sena | | |
| | Changara | Sena | | |

Extent of partnerships in agricultural radio programming

Agricultural radio programming revolves around various partners and operates in the existing predominant public or private extension and advisory framework. In any agricultural radio programming, it is important to know who is involved in order to be able to reach the target audience with relevant, appropriate and timely information. Ideally the radio station or the facilitating partners form strategic partnerships to produce an agricultural radio program since no one single agency can effectively deal with all issues in the agricultural value chain. We observed that dual partnerships exist between radio stations and the agency that may provide support but there was consistently a lack of strategic multiple partnership arrangements across and within a specific value chain.

Despite availability of dual partnerships between radio stations /studios and an agency supporting the program, there was consistently lack of strategic multiple partnerships across and within specific value chains.

One of the missed partnership opportunities is the PARTI platform that as much as it supports the IIAM radio programming but there was no any partner that had reached out to PARTI to support on content issues and or even other key functions for agricultural radio programming such as content validation despite the platform being the major innovation hub for different partners

Integration of other agricultural radio programming with other ICTs – specifically mobile platforms

Although radio continues to be an excellent medium for communicating information to farmers, it has limitations especially in being a one-way medium that cannot easily hear back from the audience. This has resulted in radio failing to provide programs on demand and provide real time information. Recent studies have shown that low cost ICTs such as mobile phones, multi-function MP3 players and interactive voice response can dramatically increase the capacity of agricultural radio broadcasts¹⁶ When asked about the extent of use of other ICT platforms and specifically the use of mobile platforms, the stations noted that they use Frontline SMS in other non-agricultural programs but not necessarily the agricultural shows. Phones are predominantly used. Respondents were asked if they have knowledge of other platforms such as 'Votomobile' and 'Telerivet' that can facilitate the use of both push and pull, SMS and audio. Also, they were asked if they have ever used tools such as Mobenzi mobile survey for monitoring listenership and feedback. The respondents were not aware of any of these technological tools and platforms. This indicates that there is opportunity and room to use more innovative mobile platforms to enhance interactivity and reach of the programs. For example, findings from a study by FRI indicated that weekly SMS alerts to listeners 30 minutes before broadcasts boosted listenership by 20%. Over 65% of radio stations felt that the use of internet was helpful in the production process of agricultural broadcasts and 61% of extension agents noted that their reach and impact was substantially improved since they could reach more people through 'call out' shows on the agricultural broadcasts.

There is limited use of other ICTs in agricultural radio broadcasts thereby compromising on the extent of interactivity, near to real time feedback and listening to radio on demand by farmers.

Level of capacity to implement agricultural radio programs at the station level

Impactful farm radio programs are based on the ability, skills and equipment present at the radio station. We found that none of the employees at the radio stations received training in agricultural programming skills apart from normal basic journalistic training. There was no training to build

¹⁶ FRI, 2011b

competency-based skills on impactful farm radio programs such as the ‘story based approach to agricultural broadcasts’ and the use of ‘participatory radio campaigns’. Although agencies such as ICS have tremendous experience in the development of radio programming, there was no specific training in this area being offered¹⁷.

We found that the radio stations and studio houses have basic equipment however they lacked some equipment such

There was no single radio station or broadcaster who has received specific agricultural radio programing course apart from attending agriculture content related trainings.

There is limited equipment especially recorders, computers and transport to ensure consistent and high quality broadcasts.

as adequate recorders, computers and transport for field recordings which poses a major challenge. For example, at the Namialo and Gurue community radio stations, there were no more than three to five good recorders and only one desktop computer for the entire production studio. The availability of equipment, such as recorders and computers, have a direct link in ensuring consistent and high quality broadcasts¹⁸. Studios like those at IIAM have state of the art

equipment but mechanisms need to be put in place for maintenance of the equipment overtime.

Extent of evidence based programming

One of the major principles for effective participatory radio is providing opportunities for the targeted audience to be fully involved in the identification of the key information needed and how the content should be delivered. In many instances respondents noted that although they appreciated the need for participatory driven programming, it was not easy to engage farmers on a continual basis. We observed there is more of the ‘push’ linear model of extension where the content processes is moved by experts rather than innovative models of extension delivery where all actors are fully engaged and content is based on meeting the information needs of actors including farmers. Institutions such as IIAM and ICS noted that they have been involved in audience-based research though how much it impacted the radio agenda was not fully assessed.

There is more ‘push’ of messages without audience research accompanying the decisions to air what type of content to ensure that it meets the information needs of farmers.

Quality assurance, monitoring and evaluation of programs

We found that though institutions are aware of the need for continuous monitoring of content and the impact of agriculture programs at the farmer level, there was little if any specific mechanism in place for such evaluations. This was quite interesting since broadcasters felt that their

There is limited on-going monitoring of programming let alone evaluation studies to know the impact of agricultural broadcasts

¹⁷ Following USAID recommendation the IIAM-Communication staff trained a number of ICS broadcasters in preparation to broadcast their programs.

¹⁸ Chapota et al, 2014

programs had impacts though they had no proof of whether or not their programs were meeting the informational needs of farmers. Reasons for not conducting such evaluations include limited budgets and the need for raising awareness of their importance for determining the effectiveness of the programming. This is an area that FTF may need to invest in to determine if specific radio programming for extension and advisory services leads to technology adoption.

Objective 2: Undertake a ‘demand’ side assessment with smallholder farmers and emerging farmers including extension workers and other organizations in the FTF Zones of Influence:

This section highlights our findings regarding farmer’s informational needs, their sources of information, their use of radio for agriculture, preferred radio programming and format, timing, duration, language and radio station. We also explored the opportunity for integration with other ICTs such as mobile platforms and level of involvement in programming.

Household level access to radio in Mozambique

The extent of household radio ownership and access is the major determinant as to whether or not it is feasible to use radio as a means of delivering extension and advisory services to farmers. A key issue to consider when planning to use any form of radio broadcast for reaching dispersed populations is how common and accepted radio listening is in the locality. Over 50% of the FGD respondents indicated that they owned a working radio at home. Those without a radio listened to the radio through friends and in market places. This is consistent with a study done by the Steadman group that noted that 92% of responding households had a radio set in Mozambique¹⁹. One surprising finding is how access to radio programs is influenced by the availability of the radio function on mobile handsets. In an FGD discussion in the Meconta district, we were surprised to find that the participants said that radios were not available in their community. After further questioning we discovered that 8 out of every 10 people who were accessing radio programs did so through their mobile phones. Even with the popularity of mobile sets, it is interesting to note that radio continues to be the most prevalent media platform owned by most households in Mozambique, including rural areas where smallholder farmers represent a majority. Therefore, FTF has an opportunity to reach many farmers through radio to deliver of agricultural extension and advisory services.

Not many of us have radio sets because they are expensive to buy and charge-BUT we still listen to radio on our mobile phones since almost every phone around here has also a radio function and for that matter mobile phones do not need to buy batteries very often as you do with radio so we easily charge our phones at the trading centre
FGD in Meconta district

Radio continues to be the major media platform available in most of the rural households in Mozambique with over 50% ownership level of functional radio sets.

¹⁹ Steadman Group, 2009

Preferred radio stations to deliver agricultural messages

To increase the effectiveness of radio programming it is important to use the preferred radio station of the targeted audience. The RM provincial station and the community radio station were the preferred radio stations in the two districts we studied. They both provided information in the vernacular language and their signal strength was strong enough to hear the information clearly. Radio Mozambique and Radio One from Malawi were touted as another options since they have national coverage with good signal strength. Even though a district has a community radio station, it does not necessarily mean that the communities in the surrounding areas have clear access. Sometimes community radio stations from faraway districts may have a better signal. It is important to note that before any investments are made by FTF, they will need to conduct more comprehensive studies to gather additional information about coverage throughout the country.

Farmers prefer a radio station that disseminates information in their vernacular language and with good signal strength

Timing of agricultural broadcasts

When asked about their preferred time for broadcasts of agricultural programs, farmers stated “when they are home and resting”. Therefore, the best time for agricultural programming is the evening from 6 to 7 pm. Farmers were asked if they liked the times the current agricultural programs are aired. They responded that the timing used by the radio stations was not suggested by them but they continue to listen though they wished such programs were offered in the evening. The farmers indicated that the evening time was suitable for both men and women.

The preferred time of listening to agricultural programs is in the evening from 6-7pm since farmers tend to be at home and available to listen.

Duration of agricultural broadcasts

When asked about their preference of the duration of the program, farmers indicated they should be at least 30 minutes long. The reason being that they needed this amount of time to fully understand an issue. Shorter programming made them aware of issues or topics but was not long enough for greater comprehension. Some farmers wanted programs to be at least one hour long especially if the program included a chance for people to call in and ask questions. Sometimes the information presented may not meet their needs so allowing the audience to ask questions is beneficial to farmers but requires additional air time.

At least 30 minutes is needed for a program that brings understanding beyond just awareness raising for the target audience

Type of formats farmers demand on the airwaves

When we asked farmers about the types of formats they like on agricultural shows, the most common answer was “agricultural debate” followed very closely by “interviews with farmers”. This demonstrates the importance farmers place on hearing from other farmers. Farmers mentioned that they love to hear testimonials from their friends who overcame a farming challenge. Expert opinions were also mentioned as very critical for helping them understand the theory and science behind farming practices.

Farmers prefer programming that involves them or other farmers such as debates and testimonials

Preferred sources of content and voices on air

When farmers were asked about their preferences in terms of voices on the air who share and give out information during agricultural interviews, the majority indicated there is a need to balance the type of voices on air. They felt that often it is the technocrats who dominate the agricultural shows. The farmers noted that although the technocrats are the ones who dominate the shows, they feel farmers should be sharing information too. They feel that farmers have the “real” experience with farming challenges and hearing from another farmer who has succeeded is better than hearing from a technocrat whose answer is often more theoretical.

Farmers preferred balanced voices on the air from both farmers and technocrats including other value chain players though they feel farmers are often sidelined.

We love hearing other farmers because they have the experience and speak of the realities we face; and we love experts because there are knowledgeable BUT we do not like the officials who come to tell us things they know cant happen.

FGD in Gurue district-Ruasse Farmers forum

Frequency of listenership by farmers

Farmers were asked how often they listen to radio in order to determine the demand for radio programming and the likelihood that farmers would be loyal listeners to agricultural programs. Generally, farmers indicated that they listen to the radio on a daily basis though often it is intermittent during the day since there are specific shows that households prefer. With approximately half of the respondents listening to radio every day, there is a good indication that radio listening is common and accepted within the communities.

Farmers listen to the radio on a daily basis though intermittently and often when they listen is based on their preferred programs.

Analysis of farmers views on current agricultural radio programming based on VOICE standards

In the last few years, FRI developed the VOICE standards as a tool that can be used for planning and evaluating farm radio programs. The V stands for Value, the need for a program to farmers; O is for giving Oppportunity to farmers to be heard; I is for the Information that is provided for farmer son air; C stands for how Consistent and Convenient it is for farmers and E is for Entertainment to ensure that no farm radio program is boring.²⁰

Farmers feel that they are valued in the programs when the language is in their vernacular but the information flow should not always be unidirectional.

In the FGDs, farmers were asked to rate how the programs faired in terms of the VOICE standards. The farmers answered this question based on the program they normally listened to.

V – Farmers were asked to assess if the agricultural programs they listen to **values** smallholder farmers, both women and men.

O – Farmers were asked if they felt the agricultural radio program they listen to provide them with the **opportunity to speak and be heard** on all matters of interest to them. It was clarified to farmers that such type of opportunity entails not telling them what to do but engaging them as equal partners in development. Rather, it encourages smallholder farmers to name their concerns, discuss them, and organize and act on them.

I **Information** they need, clearly, from the best sources, (farmers, experts, etc.) at the time of year when they need it. This included exploring if the producers, hosts and reporters regularly seek out female and male farmers who can express issues of concern to farmers; if producers, hosts and reporters regularly seek out the best other sources for issues of importance to farmers and if producers, hosts and reporters understand the annual cycle of farming activities and cover farming issues in a timely way.

C – Farmers were asked to check if the program they listen to is broadcast **conveniently**. It is broadcast on a reliable, regular basis, at least weekly, at a time of day when women and men farmers are available to listen. The program is repeated weekly on another day at another time for the convenience of farmers who could not hear the first broadcast.

E – This program is **entertaining** for men and women farmers. Its personalities, formats and features are regularly reviewed to ensure that they are fresh, attractive and enjoyable to listen to.

Farmers felt that there was limited opportunity to hear from other farmers since the programs are dominated by experts and other officials.

²⁰ FRI, 2011

Farmers felt that the programs are convenient though they wished agricultural programming was done on a daily basis since agriculture is their main livelihood activity.

Farmers noted that the broadcasters try to make the programs entertaining but more improvements are needed to attract farmers to programs.

Use of mobile platforms for interactivity

When farmers were asked if they have ever used their cellphones to interact with the broadcasters and engage in any agricultural program their response was 'no'. When pressed further to understand if they had ever heard a call in show on air or shows where people are able to write messages on air, they said they were aware of these types of current affair programs but they had never experienced them on an agricultural show. When farmers were asked if they would be willing to pay if given a chance to participate on an agricultural show, farmers' responses were affirmative. The farmers noted that they would be willing to use their phone airtime to get help when they needed it. However this contradicted what the broadcasters had said about farmers being able to use phones for interactivity in their programs.

Farmers had never participated on agricultural shows using mobile platforms but are willing to use their self-financed airtime if quality programs are available.

Opportunity for group listening

All four FGDs indicated that there is no radio listening group in their community. However, the farmers were willing to be involved in such groups if they help in furthering discussion and dialogue about the key messages needed from agricultural programs.

There was no radio listening groups in the community though farmers indicated willingness to participate in such groups if they existed in their areas.

*"We have so many questions that we would want to ask but there is no such opportunities e.g. there is an insect that is 'terrorizing' our crops here in Meconta district and we wish we could have asked such a question on the program."
FGD in Meconta district*

4 RECOMMENDATIONS

This section highlights our major recommendations and how each recommendation can be implemented. The recommendations were shared and validated with stakeholders during the debriefing and validation workshop. This provides a road map towards revitalizing the role of radio in agricultural extension and advisory services in Mozambique and within the FTF context.

The key recommendations on the use of radio are as follows:

Develop strategic and deliberate partnerships within and across value chains for effective and sustainable radio programming.

To develop an effective and dynamic radio programming effort for agricultural extension and advisory services industry in Mozambique, there needs to be a detailed stakeholder analysis that includes the key players across and within the agricultural value chains. This analysis will identify the key players for each value chain function, including their role in either information service supply or demand. It is anticipated that other value chain players who offer support services to the agricultural sector will also need to be mapped for their intrinsic interests in ensuring a vibrant agricultural industry. Such partners include micro-finance institutions, exporters, banks, mobile phone operators and others.

Based on this understanding, groups and individuals may form partnerships to study and fund efforts that focus on how radio can be used in a specific value chain and/or across different value chains. Such arrangements will help to ensure that the messages delivered on the radio link different value chain functions which correspond to the farming cycle. For example, currently Agrifuturo is supporting information dissemination through radio that targets soybean producers on the use of inoculants, which have the potential to help trigger yield increases. Therefore, linkages with other partners who are interested in disease and pest control (e.g., IIAM Crop husbandry scientists; post-harvest handling, e.g., IKURU; value addition and nutrition diversity, e.g., a food processing company; and marketing gurus like IKURU who handle exports of the commodities) can work together in a coordinated effort to provide excellent information to farmers.

This approach may be championed by organizations that are already being supported in specific value chains by USAID. Agencies and platforms that have multiple partners such as iDE, PARTI, IIAM and DNEA may also support these efforts. Farm Radio Trust may help facilitate such stakeholder engagement in order to demonstrate the possibilities that exist and share experiences from elsewhere.

Work with different types of radio stations on the same content based on audience preference to ensure repetition and better overlapping coverage with at least two radio stations per focus district.

Based on the typology of radio stations' coverage in Mozambique and indeed the audience preferences of farmers, any agency planning to use radio for extension such as FTF should use more than one station at any given time since no one single station can reach the audience effectively. The combination of radio stations should include a national broadcaster like RM or its provincial affiliate and one local community radio station. The community radio station may be the one supported/established under ICS/MMCs or a religiously affiliated station only if the farmers in that area prefer it.

In this regard, FTF may decide to work with specific community radio stations located in key provinces and focus programming on specific value chains. Such an arrangement may entail that the content be similar, though language and actual delivery will depend on each studio type and the needs of the local

farmers based on a detailed audience survey. Agencies such as FORCOM, ICS and RM would need to be engaged in the selection of the type of stations to work with while also considering the objectivity of signal strength mapping provided by INCM.

Undertake systematic content development and delivery if radio for extension and advisory services will make any difference for farmers and other value chain actors.

Farmers confirmed the need for holistic programming that addresses the informational gaps of specific value chains and other cross cutting content areas such as nutrition and climate change. This may require a detailed analysis that will help build a database on the key themes, messages, sources of content, timing for each content area and the kind of formats to be used to deliver such content. However, this recommendation must be viewed from the context of beyond 'technology transfer' towards innovation systems so that institutions such as IIAM are not seen as the single source of technologies, but rather that other agencies – including farmers – have a major role in providing content and help designing the content to meet both scientific conditions and practical realities on the ground for effective adoption.

Institutions may support this exercise if their main mandate involves coordinating delivery of extension messages. However, the focus should not be on 'technology transfer' as a push linear model. Instead they should use an innovations systems approach that includes all actors, i.e., farmers, as drivers of change and not only recipients.

Implement participatory radio programming for effective engagement and impact on target audience.

An impactful radio program involves having the appropriate key actors involved throughout the process of developing and airing the program. Based on the PRC approach championed by Farm Radio International, all key stakeholders especially radio stations, research institutes and extension service providers would need to be trained in all the aspects of a participatory model of programming. They should follow a systematic plan that responds to community priorities, is suited to listener preferences, features appropriate and farmer demanded agricultural technologies, features farmers voices, dialogue, interaction and provides accurate information that is updated based on constant feedback from farmers. Farm Radio Trust might champion this work with close collaboration from partners such as DNEA and the Eduardo Mondlane University.

Use both existing agricultural radio programs with new mechanisms and/or fresh programming with specific focus on value chain approach.

USAID/Feed the Future could use existing agricultural radio programming as an entry point since program loyalty takes time to establish among listeners. Programs that focus on oil seeds such as 'Agrifuturo Inoculant promotion program' on Gurue radio station could be a good entry point to address issues of the soybeans value chain rather than starting a new program. However, any use of existing agricultural programming should be infused with new impetus so that listeners can notice the changes that have been made. FTF may want to launch new programming using lessons learned from existing programs. All programming efforts should be developed in collaboration with the radio stations and the target audience and should use of new formats mentioned previously.

Integrate mobile platforms for interactive and demand driven radio for extension service system from inception.

Modern ICTs, e.g., the mobile phone, is critical in helping overcome radio's fundamental challenge: it has traditionally been a one-way communication medium lacking opportunities for listeners to re-listen to vital information and to listen at their convenience. Tools such as call-ins, call-outs, SMS alerts, beeps and IVRs enhance radio's interactivity with listeners by presenting them with opportunities to contribute their voices and feedback, in addition to providing them with opportunities to listen to repeat information on their mobile phones. These modern ICTs have become increasingly more affordable.

Therefore, building on the work that IREX project has championed on the use of frontline SMS and installation of internet at some selected stations, it is important to ensure that any new programming or the use of existing programming has embraced the use of innovative ICT solutions being used in various places like Malawi and Tanzania. One such innovation is the use of the 'beep' or 'flush' that costs nothing to the user to receive specific information – e.g., a farmer may beep in order to receive price information at his/her closest market.

Deliver capacity building packages to radio stations and not solo efforts.

The quality, relevance and sustainability of farm radio services are directly tied to the skills and knowledge of the people that run radio stations, including managers and the staff that do research, produce and present radio programs. One time skills building workshops cannot meet all the needs that these stations face when they try to produce quality, impact-driven farm radio programs. A capacity building package that includes skills strengthening in agricultural radio programming, content delivery, broadcasting equipment support and ICT support are critical for the improvement in the way farm radio programs are handled at the station level. Collaboration with agencies such ICS and FORCOM to support such efforts and deliver such capacity building packages would be ideal.

Incorporate business modeling in agricultural radio programming for greater impact and sustainability.

The need to explore different sources of revenue for agricultural broadcasts requires new thinking on how public, private and civil society can work together. During this study it was amazing to see how even farmers are ready to support programming that could help them increase yields and find better markets and prices. Institutions such as IDE who are supporting private sector models of extension noted the opportunities that exist among both input and output markets to co-invest in agricultural radio programming. Therefore, partners who want to invest in radio need to look beyond just advertising and pursue other business models to ensure programming sustainability. Institutions such as radio stations IIAM and ICS are failing to meet some of the costs associated with effective programming while not capitalizing on the sources of revenues that may exist for their programs. This entails deliberate engagement with private players in the agricultural sector to develop sustainable business models with the radio stations.

Develop mechanisms for quality assurance, monitoring and evaluation of radio for extension and advisory services.

The need to know how farm radio programs works and to what extent they contribute to the adoption of technologies and increased productivity is essential if agencies are going to invest in such an approach. Therefore, partners need to develop mechanisms to ensure effective evidence-based programming through tailor made audience research for specific programs, quality assurance

mechanisms that include content review and vetting processes, as well as impact measurement of the methods at the community level. Collaborations with agencies such as the Eduardo Mondlane University and MEAS would enrich such processes.

Invest in a pilot innovative agricultural radio programming for increased access to agricultural extension and advisory services in FTF areas.

We believe that there is great potential to develop innovative models that use radio for agricultural extension services. We recommend that FTF and other partners tailor their investments towards more research and assessment of such models. A pilot project should be supported that addresses one or two value chains in one or two provinces. The pilot should work with at least four radio stations for a period of 12 months and cover the whole production cycle of that specific value chain. From such a pilot, lessons will be drawn that could be scaled up in the second year to more provinces and value chains.

5 CONCLUSION

This rapid assessment has shown that there are opportunities to use radio in Mozambique to help deliver extension and advisory services to smallholder farmers. The study shows that there are many innovative approaches that can be used to improve agricultural radio programming and integrate programs with other ICTs – especially mobile platforms – for increased interactivity and reach.

The innovative use of radio for agricultural extension and advisory services using approaches such as the FRI ‘Participatory Radio Campaign’ should be considered to address the information challenges facing Mozambique agriculture development, markets and transfer of technologies. However, exploiting the potential that exists in radio for agricultural extension and advisory services requires input from all major stakeholders, coordination and a value chain approach.

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Annex 1: Key Informant Interview Checklist

1. Briefly describe your institution (its vision, mission, and strategic objectives)?
2. Is there a way your organization is associated with the role of radio in agricultural extension and advisory services?
3. How does your organization use radio for agricultural extension and advisory services?
4. What types of radio programs/formats do you use in your organization?
5. What precise agricultural value chain services (such as input supply, production, post harvest, market information) does your institution provide to smallholder farmers through radio?
6. Who owns the platform that you are using? Probe on ownership/source of platform/linkages with other service providers in use of radio for extension?
7. Describe how and when was the platform launched/started being used?
8. What motivated you to launch this service? Was it just your own innovation or it was done out of demand by farmers? Probe on the source of the service/evidence based/donor selection/experimental.
9. How wide is your coverage or how big is your clientele? Probe on #s being reached, how able to know the # being reached, data and/or geo maps for the coverage if available. Check availability Vs accessibility.
10. What is the source of content that goes onto the radio programs? For example, do you work with experts in agricultural extension or researchers or academia? Probe on linkages to agricultural research and extension linkages including intellectual property issues.
11. How do you ensure quality of information is not compromised? Probe on quality assurance from the users point of view
12. In terms of policy or legal compliance, who provides oversight over your use of radio in agricultural extension services? Probe if any challenges being experienced.
13. How do you ensure interactivity smallholder farmers and content providers?
14. To access the platform or service, do the users e.g. farmers have to pay or it is free? Probe on payment modes, business models surrounding the platform. Check if it is free, how the institution affords to maintain the service?
15. In your assessment how has the performance of the service been? Probe indicators for performance from the perspective of the institution.
16. How do you measure the success or failure of the platform or service you are offering? Do you have tools for assessing the service or platform? Is it quantitative or qualitative?
17. In your view have farmers/users fully embraced the service?
18. What gaps or challenges have you identified in the service?

19. If we hired you to design a similar platform or service, what advice would you give us in terms of
 - a) Development/establishment cost
 - b) Human resource needed/Capacity
 - c) Maintenance cost
 - d) Duration needed to design/adapt the platform
 - e) Business modeling
20. What are your thoughts in the strengths, weaknesses, opportunities and threats on the use of radio for extension in Mozambique?
21. Kindly let me know if there is something that I have forgotten to ask you.

Annex 2: List of stakeholders & participants engaged in the KII & stakeholder consultative workshop

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